

CLAIMS

1. An array for a display, comprising:

a plurality of row positions;

a plurality of column positions;

5 a plurality of three-color pixel elements, one of said three-color pixel elements disposed in each of said row positions and said column positions, each of said three-color pixel elements comprising:

a blue emitter disposed at a center of a square disposed at an origin of an X, Y coordinate system having a first, a second, a third, and a fourth quadrant, wherein said blue emitter is square-shaped;

15 a pair of red emitters spaced apart from said blue emitter and symmetrically disposed about said blue emitter in said second and said fourth quadrants, wherein said red emitters occupy a portion of said second and said fourth quadrants not occupied by said blue emitter, wherein said red emitters are generally square-shaped having truncated inwardly-facing corners forming edges parallel to sides of said blue emitter;

a pair of green emitters spaced apart from said blue emitter and symmetrically disposed about said blue emitter in said first and said third quadrants, wherein said green emitters occupy a portion of said first and said third quadrants not

occupied by said blue emitter, wherein said green emitters are generally square-shaped having truncated inwardly-facing corners forming edges parallel to said sides of said blue emitter;

a pair of row lines associated with each said row position in said array, a

5 first of said row lines coupled to said red emitters and to said green emitters in said row position disposed above said origin of said coordinate system in each of said three-color pixel elements and coupled to said blue emitters of every even pair of adjacent said three-color pixel elements in said row position, and a second of said row lines coupled to said red emitters and to said green emitters in said row position disposed below said origin of said coordinate system in each of said three-color pixel elements, and coupled to said blue emitters of every odd pair of adjacent said three-color pixel elements in said row position; and

three column lines associated with each said column position in said array,

a first of said column lines coupled to said red emitters and to said green emitters in said

15 column position disposed left of said origin of said rectangular coordinate system in each of said three-color pixel elements, a second of said column lines coupled to said blue emitter in said column position disposed at said origin of said rectangular coordinate system in each of said three-color pixel elements, and a third of said column lines

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coupled to said red emitters and to said green emitters in said column position disposed right of said origin of said rectangular coordinate system in each of said three-color pixel elements, wherein said second column line is coupled to said second column line of a next nearest neighboring said three-color pixel element.

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2. The array of Claim 1, wherein each said three-color pixel element in a row direction has a spatial frequency greater than a column direction.

3. The array of Claim 1, wherein each said three-color pixel element in a column direction has a spatial frequency greater than in a row direction.

4. The array of Claim 1, wherein each said row line coupled to each said red emitter, said green emitter, and said blue emitter is coupled to a gate of a select transistor.

15 5. The array of Claim 1, wherein each said column line coupled to each said red emitter, said green emitter, and said blue emitter is coupled to a source/drain terminal of a select transistor.

6. The array of Claim 1, wherein said array is driven by dot inversion.

7. An array for a display, comprising:

a plurality of row positions;

a plurality of column positions;

a plurality of three-color pixel elements, one of said elements disposed in each of said row positions and said column positions, each of said three-color pixel elements comprising:

a blue emitter disposed at a center of a square disposed at an origin of an X, Y coordinate system having a first, a second, a third, and a fourth quadrant, wherein said blue emitter is square-shaped;

a pair of red emitters spaced apart from said blue emitter and symmetrically disposed about said blue emitter in said second and said fourth quadrants, wherein said red emitters occupy a portion of said second and said fourth quadrants not occupied by said blue emitter, wherein said red emitters are L-shaped;

a pair of green emitters spaced apart from said blue emitter and symmetrically disposed about said blue emitter in said first and said third quadrants, wherein said green emitters occupy a portion of said first and said third quadrants not occupied by said blue emitter, wherein said green emitters are L-shaped;

a pair of row lines associated with each said row position in said array, a  
 first of said row lines coupled to said red emitters and to said green emitters in said row  
 position disposed above said origin of said coordinate system in each of said three-color  
 pixel elements and coupled to said blue emitters of every even pair of adjacent said three-  
 color pixel elements in said row position, and a second of said row lines coupled to said  
 red emitters and to said green emitters in said row position disposed below said origin of  
 said coordinate system in each of said three-color pixel elements and coupled to said blue  
 emitters of every odd pair of adjacent said three-color pixel elements in said row position;  
 and

three column lines associated with each said column position in said array,  
 a first of said column lines coupled to said red emitters and to said green emitters in said  
 column position disposed left of said center of said square in each of said three-color  
 pixel elements, a second of said column lines coupled to said blue emitter in said column  
 position disposed at said center of said square in each of said three-color pixel elements,  
 and a third of said column lines coupled to said red emitters and to said green emitters in  
 said column position disposed right of said center of said square in each of said three-  
 color pixel elements, wherein said second column line is coupled to said second column  
 line of a next nearest neighboring said three-color pixel element.

8. The array of Claim 7, wherein each said three-color pixel element in a row direction has a spatial frequency greater than in a column direction.

9. The array of Claim 7, wherein each said three-color pixel element in a column direction has a spatial frequency greater than in a row direction.

10. The array of Claim 7, wherein each said row line coupled to each said red emitter, said green emitter, and said blue emitter is coupled to a gate of a select transistor.

11. The array of Claim 7, wherein each said column line coupled to each said red emitter, said green emitter, and said blue emitter is coupled to a source/drain terminal of a select transistor.

12. The array of Claim 7, wherein said array is driven by dot inversion.

13. An array of three-color pixel elements, comprising:

a row comprising first, second, third, and fourth three-color pixel elements,  
 each three-color pixel element comprising a blue emitter disposed at a center of a square  
 disposed at an origin of an X, Y coordinate system having a first, a second, a third, and a  
 fourth quadrant, wherein said blue emitter is square-shaped, a pair of red emitters spaced  
 apart from said blue emitter and symmetrically disposed about said blue emitter in said  
 second and said fourth quadrants, wherein said red emitters occupy a portion of said  
 second and said fourth quadrants not occupied by said blue emitter, wherein said red  
 emitters are generally square-shaped having truncated inwardly-facing corners forming  
 edges parallel to sides of said blue emitter, and a pair of green emitters spaced apart from  
 said blue emitter and symmetrically disposed about said blue emitter in said first and said  
 third quadrants, wherein said green emitters occupy a portion of said first and said third  
 quadrants not occupied by said blue emitter, wherein said green emitters are generally  
 square-shaped having truncated inwardly-facing corners forming edges parallel to said  
 sides of said blue emitter;

first and second row line drivers;

a first row line coupled to said first row line driver, said first row line  
 coupled to said blue emitter of said third and said fourth three-color pixel elements and to

said first red emitter and said first green emitter of said first, second, third, and fourth three-color pixel elements;

5 a second row line coupled to said second row line driver, said second row line coupled to said blue emitter of said first and said second three-color pixel elements and to said second red emitter and said second green emitter of said first, second, third, and fourth three-color pixel elements;

first through tenth column line drivers;

a first column line coupled to said first column line driver, said first column line coupled to said first red emitter and said second green emitter of said first three-color pixel element;

a second column line coupled to said second column line driver, said second column line coupled to said blue emitter of said first three-color pixel element and to an eighth column line coupled to said blue emitter of said third three-color pixel element;

15 a third column line coupled to said third column line driver, said third column line coupled to said second red emitter and said first green emitter of said first three-color pixel element;



a fourth column line coupled to said fourth column line driver, said fourth column line coupled to said first red emitter and said second green emitter of said second three-color pixel element;

a fifth column line coupled to said fifth column line driver, said fifth column line coupled to said blue emitter of said second three-color pixel element and to an eleventh column line coupled to said blue emitter of said fourth three-color pixel element;

a sixth column line coupled to said sixth column line driver, said sixth column line coupled to said second red emitter and said first green emitter of said second three-color pixel element;

a seventh column line coupled to said seventh column line driver, said seventh column line coupled to said first red emitter and said second green emitter of said third three-color pixel element;

a ninth column line coupled to said eighth column line driver, said ninth column line coupled to said first red emitter and said second green emitter of said fourth three-color pixel element;

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a tenth column line coupled to said ninth column line driver, said tenth column line coupled to said second red emitter and said first green emitter of said fourth three-color pixel element; and

a twelfth column line coupled to said tenth column line driver, said tenth column line coupled to said second red emitter and said first green emitter of said fourth three-color pixel element.

14. The array of Claim 13, wherein said array is driven by dot inversion.

15. The array of Claim 13, wherein each said row line coupled to each said red emitter, said green emitter, and said blue emitter is coupled to a gate of a select transistor.

16. The array of Claim 13, wherein each said column line coupled to each said red emitter, said green emitter, and said blue emitter is coupled to a source/drain terminal of a select transistor.

17. The array of Claim 13, further comprising another blue emitter in each said three-color pixel element.

18. An array of three-color pixel elements, comprising:

a row comprising first, second, third, and fourth three-color pixel elements, each three-color pixel element comprising a blue emitter disposed at a center of a square disposed at an origin of an X, Y coordinate system having a first, a second, a third, and a fourth quadrant, wherein said blue emitter is square-shaped, a pair of red emitters spaced apart from said blue emitter and symmetrically disposed about said blue emitter in said second and said fourth quadrants, wherein said red emitters occupy a portion of said second and said fourth quadrants not occupied by said blue emitter, wherein said red emitters are L-shaped, and a pair of green emitters spaced apart from said blue emitter and symmetrically disposed about said blue emitter in said first and said third quadrants, wherein said green emitters occupy a portion of said first and said third quadrants not occupied by said blue emitter, wherein said green emitters are L-shaped

first and second row line drivers;

a first row line coupled to said first row line driver, said first row line coupled to said blue emitter of said third and said fourth three-color pixel element and to said first red emitter and said first green emitter of said first, second, third, and fourth three-color pixel elements;

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 a second row line coupled to said second row line driver, said second row line coupled to said blue emitter of said first and said second three-color pixel element and to said second red emitter and said second green emitter of said first, second, third, and fourth three-color pixel elements;

first through tenth column line drivers;

10 a first column line coupled to said first column line driver, said first column line coupled to said first red emitter and said second green emitter of said first three-color pixel element;

15 a second column line coupled to said second column line driver, said second column line coupled to said blue emitter of said first three-color pixel element and to an eighth column line coupled to said blue emitter of said third three-color pixel element;

a third column line coupled to said third column line driver, said third column line coupled to said second red emitter and said first green emitter of said first three-color pixel element;

a fourth column line coupled to said fourth column line driver, said fourth column line coupled to said first red emitter and said second green emitter of said second three-color pixel element;


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 a fifth column line coupled to said fifth column line driver, said fifth column line coupled to said blue emitter of said second three-color pixel element and to an eleventh column line coupled to said blue emitter of said fourth three-color pixel element;

5 a sixth column line coupled to said sixth column line driver, said sixth column line coupled to said second red emitter and said first green emitter of said second three-color pixel element;

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 a seventh column line coupled to said seventh column line driver, said seventh column line coupled to said first red emitter and said second green emitter of said third three-color pixel element;

a ninth column line coupled to said eighth column line driver, said ninth column line coupled to said first red emitter and said second green emitter of said fourth three-color pixel element;

15 a tenth column line coupled to said ninth column line driver, said tenth column line coupled to said second red emitter and said first green emitter of said fourth three-color pixel element; and


 a twelfth column line coupled to said tenth column line driver, said tenth column line coupled to said second red emitter and said first green emitter of said fourth three-color pixel element

5      19.      The array of Claim 18, wherein said array is driven by dot inversion.

20.      The array of Claim 18, wherein each said row line coupled to each said red emitter, said green emitter, and said blue emitter is coupled to a gate of a select transistor.

21.      The array of Claim 18, wherein each said column line coupled to each said red emitter, said green emitter, and said blue emitter is coupled to a source/drain terminal of a select transistor.

22.      The array of Claim 18, further comprising another blue emitter in each said  
 15      three-color pixel element.

23.      A three-color pixel element for a display, comprising:

first and second pixel rows, each pixel row including three unit-area polygons, wherein an emitter occupies each said unit-area polygon;

wherein a red emitter occupies a left unit-area polygon in said first pixel row and a green emitter occupies a right unit-area polygon in said first pixel row;

5 wherein a green emitter occupies a left unit-area polygon in said second pixel row and a red emitter occupies a right unit-area polygon in said second pixel row; and

wherein a blue emitter occupies a center unit-area polygon in both said first and said second pixel rows.

24. The three-color pixel element of Claim 23, wherein said green emitter occupies a left unit-area polygon in said first pixel row and said red emitter occupies a right unit-area polygon in said first pixel row; and wherein said red emitter occupies a left unit-area polygon in said second pixel row and said green emitter occupies a right unit-area polygon in said second pixel row.

25. The three-color pixel element of Claim 23, wherein said unit-area polygon is a square.

26. The three-color pixel element of Claim 23, wherein said unit-area polygon is a rectangle.

27. The three-color pixel element of Claim 23, wherein said blue emitters occupying said center unit-area polygon in both said first and said second pixel rows are wired together.

28. An array for a display, comprising:  
 a plurality of array row positions;  
 a plurality of column positions;  
 a plurality of three-color pixel elements, one of said three-color pixel elements disposed in each of said row positions and said column positions, each of said three-color pixel elements comprising:

first and second pixel rows, each pixel row including three unit-area polygons, wherein an emitter occupies each said unit-area polygon, wherein a red emitter occupies a left unit-area polygon in said first pixel row and a green emitter occupies a right unit-area polygon in said first pixel row, wherein a green emitter occupies a left



unit-area polygon in said second pixel row and a red emitter occupies a right unit-area polygon in said second pixel row, and wherein a blue emitter occupies a center unit-area polygon in both said first and said second pixel rows;

a plurality of row lines associated with each said row position in said array,

5 a first of said row lines coupled to said blue emitter in said first pixel row, to said red emitters in said first pixel row and to said green emitters in said first pixel row in each of said three-color pixel elements in said array row position, wherein said first of said row lines is coupled to said blue emitters in said first pixel row of every even pair of adjacent said three-color pixel elements, and a second of said row lines coupled to said blue emitter in said second pixel row, to said red emitters in said second pixel row, and to said green emitters in said second pixel row in each of said three-color pixel elements in said array row position, wherein said second of said row lines is coupled to said blue emitters in said second row of every odd pair of adjacent said three-color pixel elements; and

a plurality of column lines associated with each said column position, a first  
15 of said column lines coupled to said red emitters and to said green emitters in said column position disposed left of said blue emitters in each of said three-color pixel elements, a second of said column lines coupled to said blue emitters in said column position disposed at said center of square in each of said three-color pixel elements, and a

third of said column lines coupled to said red emitters and to said green emitters in said column position disposed right of said blue emitters in each of said three-color pixel elements, wherein said second column line is coupled to said second column line of a next nearest neighboring said three-color pixel element.

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29. The array of Claim 28, wherein each said three-color pixel element in a row direction has a spatial frequency greater than in a column direction.

30. The array of Claim 28, wherein each said three-color pixel element in a column direction has a spatial frequency greater than in a row direction.

31. The array of Claim 28, wherein each said row line coupled to each said red emitter, said green emitter, and said blue emitter is coupled to a gate of a select transistor.

15 32. The array of Claim 28, wherein each said column line coupled to each said red emitter, said green emitter, and said blue emitter is coupled to a source/drain terminal of a select transistor.

33. The array of Claim 28, wherein said array is driven by dot inversion.

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34. The array of Claim 28, wherein said green emitter occupies a left unit-area polygon in said first pixel row and said red emitter occupies a right unit-area polygon in said first pixel row; and wherein said red emitter occupies a left unit-area polygon in said second pixel row and said green emitter occupies a right unit-area polygon in said second pixel row.

35. The array of Claim 28, wherein said unit-area polygon is a square.

36. The array of Claim 28, wherein said unit-area polygon is a rectangle.

37. The array of Claim 28, wherein said blue emitters occupying said center unit-area polygon in both said first and said second pixel rows are wired together.

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38. An array of three-color pixel elements, comprising:

an array row comprising first, second, third, and fourth three-color pixel elements, each said three-color pixel element comprising first and second pixel rows,

each pixel row including three unit-area polygons, wherein an emitter occupies each said unit-area polygon, wherein a red emitter occupies a left unit-area polygon in said first pixel row and a green emitter occupies a right unit-area polygon in said first pixel row, wherein a green emitter occupies a left unit-area polygon in said second pixel row and a red emitter occupies a right unit-area polygon in said second pixel row, and wherein a blue emitter occupies a center unit-area polygon in both said first and said second pixel rows;

first and second row line drivers;

a first row line coupled to said first row line driver, said first row line coupled to said blue emitters in said first pixel row of said third and said fourth three-color pixel element and to said red emitter and said green emitter in said first pixel row of said first, second, third, and fourth three-color pixel elements;

a second row line coupled to said second row line driver, said second row line coupled to said blue emitters in said second pixel row of said first and said second three-color pixel element and to said red emitter and said green emitter in said second pixel row of said first, second, third, and fourth three-color pixel elements;

first through tenth column line drivers;

a first column line coupled to said first column line driver, said first column line coupled to said first red emitter and said second green emitter of said first three-color pixel element;

a second column line coupled to said second column line driver, said second column line coupled to said blue emitters of said first three-color pixel element and to an eighth column line coupled to said blue emitters of said third three-color pixel element;

a third column line coupled to said third column line driver, said third column line coupled to said second red emitter and said first green emitter of said first three-color pixel element;

a fourth column line coupled to said fourth column line driver, said fourth column line coupled to said first red emitter and said second green emitter of said second three-color pixel element;

a fifth column line coupled to said fifth column line driver, said fifth column line coupled to said blue emitters of said second three-color pixel element and to an eleventh column line coupled to said blue emitters of said fourth three-color pixel element;

a sixth column line coupled to said sixth column line driver, said sixth column line coupled to said second red emitter and said first green emitter of said second three-color pixel element;

5 a seventh column line coupled to said seventh column line driver, said seventh column line coupled to said first red emitter and said second green emitter of said third three-color pixel element;

a ninth column line coupled to said eighth column line driver, said ninth column line coupled to said first red emitter and said second green emitter of said fourth three-color pixel element;

10 a tenth column line coupled to said ninth column line driver, said tenth column line coupled to said second red emitter and said first green emitter of said fourth three-color pixel element; and

15 a twelfth column line coupled to said tenth column line driver, said tenth column line coupled to said second red emitter and said first green emitter of said fourth three-color pixel element.

39. The array of Claim 38, wherein said array is driven by dot inversion.

40. The array of Claim 38, wherein each said row line coupled to each said red emitter, said green emitter, and said blue emitter is coupled to a gate of a select transistor.

41. The array of Claim 38, wherein each said column line coupled to each said red emitter, said green emitter, and said blue emitter is coupled to a source/drain terminal of a select transistor.

42. The array of Claim 38, wherein said green emitter occupies a left unit-area polygon in said first row and said red emitter occupies a right unit-area polygon in said first row; and wherein said red emitter occupies a left unit-area polygon in said first row and said green emitter occupies a right unit-area polygon in said first row.

43. The array of Claim 38, wherein said unit-area polygon is a square.

44. The array of Claim 38, wherein said unit-area polygon is a rectangle.

45. The array of Claim 38, wherein said blue emitters occupying said center unit-area polygon in both said first and said second rows are wired together.

46. A three-color pixel element for a display, comprising:

first and second pixel rows, each pixel row including three unit-area polygons, wherein an emitter occupies each said unit-area polygon;

5 wherein a red emitter occupies a left unit-area polygon in said first pixel row and a green emitter occupies a right unit-area polygon in said first pixel row;

wherein a green emitter occupies a left unit-area polygon in said second pixel row and a red emitter occupies a right unit-area polygon in said second pixel row; and

10 wherein a single blue emitter occupies both center unit-area polygons in said first and said second pixel rows.

15 ~~47. The three-color pixel element of Claim 46, wherein said green emitter occupies a left unit-area polygon in said first pixel row and said red emitter occupies a right unit-area polygon in said first pixel row; and wherein said red emitter occupies a left unit-area polygon in said second pixel row and said green emitter occupies a right unit-area polygon in said second pixel row.~~



48. The three-color pixel element of Claim 46, wherein said unit-area polygon is a square.

49. The three-color pixel element of Claim 46, wherein said unit-area polygon  
5 is a rectangle.

50. An array for a display, comprising:

a plurality of array row positions;

a plurality of column positions;

a plurality of three-color pixel elements, one of said three-color pixel elements disposed in each of said row positions and said column positions, each of said three-color pixel elements comprising:

15 first and second pixel rows, each pixel row including three unit-area polygons, wherein an emitter occupies each said unit-area polygon, wherein a red emitter occupies a left unit-area polygon in said first pixel row and a green emitter occupies a right unit-area polygon in said first pixel row; wherein a green emitter occupies a left unit-area polygon in said second pixel row and a red emitter occupies a right unit-area

polygon in said second pixel row; and wherein a single blue emitter occupies both center  
 unit-area polygons in said first and said second pixel rows;

a plurality of row lines associated with each said row position in said array,  
 a first of said row lines coupled to said blue emitter, to said red emitters, and to said green  
 5 emitters in said first pixel row in each of said three-color pixel elements in said array row  
 position, wherein said first of said row lines is coupled to said blue emitters of every even  
 pair of adjacent said three-color pixel elements, and a second of said row lines coupled to  
 said blue emitter, to said red emitters, and to said green emitters in said second pixel row  
 in each of said three-color pixel elements in said array row position, wherein said second  
 of said row lines is coupled to said blue emitters of every odd pair of adjacent said three-  
 color pixel elements; and

a plurality of column lines associated with each said column position in  
 said array, a first of said column lines coupled to said red emitters and to said green  
 emitters in said column position disposed left of said blue emitter in each of said three-  
 15 color pixel elements, a second of said column lines coupled to said blue emitter in said  
 column position in each of said three-color pixel elements, and a third of said column  
 lines coupled to said red emitters and to said green emitters in said column position  
 disposed right of said blue emitter in each of said three-color pixel elements, wherein said

second column line is coupled to said second column line of a next nearest neighboring  
 said three-color pixel element.

51. The array of Claim 50, wherein each said three-color pixel element in a row  
 5 direction has a spatial frequency greater than in a column direction.

52. The array of Claim 50, wherein each said three-color pixel element in a  
 column direction has a spatial frequency greater than in a row direction.

53. The array of Claim 50, wherein each said row line coupled to each said red  
 emitter, said green emitter, and said blue emitter is coupled to a gate of a select transistor.

54. The array of Claim 50, wherein each said column line coupled to each said  
 red emitter, said green emitter, and said blue emitter is coupled to a source/drain terminal  
 15 of a select transistor.

55. The array of Claim 50, wherein said array is driven by dot inversion.

56. The array of Claim 50, wherein said green emitter occupies a left unit-area polygon in said first pixel row and said red emitter occupies a right unit-area polygon in said first pixel row; and wherein said red emitter occupies a left unit-area polygon in said second pixel row and said green emitter occupies a right unit-area polygon in said second pixel row.

57. The array of Claim 50, wherein said unit-area polygon is a square.

58. The array of Claim 50, wherein said unit-area polygon is a rectangle.

59. An array of three-color pixel elements, comprising:

an array row comprising first, second, third, and fourth three-color pixel elements, each three-color pixel element comprising first and second pixel rows, each pixel row including three unit-area polygons, wherein an emitter occupies each said unit-area polygon, wherein a red emitter occupies a left unit-area polygon in said first pixel row and a green emitter occupies a right unit-area polygon in said first pixel row; wherein a green emitter occupies a left unit-area polygon in said second pixel row and a red emitter occupies a right unit-area polygon in said second pixel row; and wherein a single

blue emitter occupies both center unit-area polygons in said first and said second pixel rows;

first and second row line drivers;

a first row line coupled to said first row line driver, said first row line

coupled to said blue emitters of said third and said fourth three-color pixel element and to said red emitter and said green emitter in said first pixel row of said first, second, third, and fourth three-color pixel elements;

a second row line coupled to said second row line driver, said second row line coupled to said blue emitters of said first and said second three-color pixel element and to said red emitter and said green emitter in said second pixel row of said first, second, third, and fourth three-color pixel elements;

first through tenth column line drivers;

a first column line coupled to said first column line driver, said first column line coupled to said first red emitter and said second green emitter of said first three-color pixel element;

a second column line coupled to said second column line driver, said second column line coupled to said blue emitter of said first three-color pixel element and

to an eighth column line coupled to said blue emitter of said third three-color pixel element;

a third column line coupled to said third column line driver, said third column line coupled to said second red emitter and said first green emitter of said first three-color pixel element;

a fourth column line coupled to said fourth column line driver, said fourth column line coupled to said first red emitter and said second green emitter of said second three-color pixel element;

a fifth column line coupled to said fifth column line driver, said fifth column line coupled to said blue emitter of said second three-color pixel element and to an eleventh column line coupled to said blue emitter of said fourth three-color pixel element;

a sixth column line coupled to said sixth column line driver, said sixth column line coupled to said second red emitter and said first green emitter of said second three-color pixel element;

a seventh column line coupled to said seventh column line driver, said seventh column line coupled to said first red emitter and said second green emitter of said third three-color pixel element;

a ninth column line coupled to said eighth column line driver, said ninth column line coupled to said first red emitter and said second green emitter of said fourth three-color pixel element;

a tenth column line coupled to said ninth column line driver, said tenth column line coupled to said second red emitter and said first green emitter of said fourth three-color pixel element; and

a twelfth column line coupled to said tenth column line driver, said tenth column line coupled to said second red emitter and said first green emitter of said fourth three-color pixel element.

60. The array of Claim 59, wherein said array is driven by dot inversion.

61. The array of Claim 59, wherein each said row line coupled to each said red emitter, said green emitter, and said blue emitter is coupled to a gate of a select transistor.

62. The array of Claim 59, wherein each said column line coupled to each said red emitter, said green emitter, and said blue emitter is coupled to a source/drain terminal of a select transistor.

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63. The array of Claim 59, wherein said green emitter occupies a left unit-area polygon in said first pixel row and said red emitter occupies a right unit-area polygon in said first pixel row; and wherein said red emitter occupies a left unit-area polygon in said second pixel row and said green emitter occupies a right unit-area polygon in said second pixel row.

64. The array of Claim 59, wherein said unit-area polygon is a square.

65. The array of Claim 59, wherein said unit-area polygon is a rectangle.

66. An array for a display, comprising:

a plurality of array row positions;

a plurality of column positions;

15 a plurality of three-color pixel elements, one of said three-color pixel elements disposed in each of said array row positions and said column positions, wherein each of said three-color pixel elements comprises:



first and second pixel rows, each row including three unit-area polygons, wherein an emitter occupies each said unit-area polygon, wherein a red emitter occupies a left unit-area polygon in said first pixel row and a green emitter occupies a right unit-area polygon in said first pixel row; wherein a green emitter occupies a left unit-area polygon in said first pixel row and a red emitter occupies a right unit-area polygon in said first pixel row; and wherein a single blue emitter occupies both center unit-area polygons in said first and said second pixel rows;

wherein adjacent horizontal pairs of said three-color pixel elements are vertically offset from one another by one pixel row;

a plurality of row lines associated with each said array row position,

wherein a first of said row lines is coupled to all said red and said green emitters in said first pixel row of each odd pair of said three-color pixel elements in each said array row position and to all said red and said green emitters in said second pixel row of each even pair of said three-color pixel elements in each said array row position,

wherein said first of said row lines is coupled to said blue emitters of every odd pair of adjacent said three-color pixel elements;

wherein a second of said row lines is coupled to all said red and said green emitters in said second pixel row of each odd pair of said three-color pixel elements in

each said array row position and to all said red and said green emitters in said first pixel row of each even pair of said three-color pixel elements in each said array row position, wherein said first of said row lines is coupled to said blue emitters of every even pair of adjacent said three-color pixel elements; and

a plurality of column lines associated with each said column position in said array;

wherein a first, a fourth, a seventh, and a tenth of said column lines is coupled to said red emitters and to said green emitters in said column position disposed left of said blue emitter in each of said three-color pixel elements;

wherein a second, a fifth, an eighth, and an eleventh of said column lines is coupled to said blue emitter in said column position in each of said three-color pixel elements, wherein said second of said column lines is coupled to said eighth of said column lines and wherein said fifth of said column lines is coupled to said eleventh of said column lines;

wherein a third, a sixth, a ninth, and a twelfth of said column lines is coupled to said red emitters and to said green emitters in said column position disposed right of said blue emitter in each of said three-color pixel elements.

67. The array of Claim 66, wherein each said three-color pixel element in a row direction has a spatial frequency greater than in a column direction.

68. The array of Claim 66, wherein each said three-color pixel element in a  
5 column direction has a spatial frequency greater than in a row direction.

69. The array of Claim 66, wherein each said row line coupled to each said red emitter, said green emitter, and said blue emitter is coupled to a gate of a select transistor.

70. The array of Claim 66, wherein each said column line coupled to each said red emitter, said green emitter, and said blue emitter is coupled to a source/drain terminal of a select transistor.

71. The array of Claim 66, wherein said array is driven by dot inversion.

15 72. The array of Claim 66, wherein said green emitter occupies a left unit-area polygon in said first pixel row and said red emitter occupies a right unit-area polygon in said first pixel row; and wherein said red emitter occupies a left unit-area polygon in said

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second pixel row and said green emitter occupies a right unit-area polygon in said second pixel row.

73. The array of Claim 66, wherein said unit-area polygon is a square.

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74. The array of Claim 66, wherein said unit-area polygon is a rectangle.

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75. An array of three-color pixel elements, comprising:

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a plurality of array rows and a plurality of array columns containing three-color pixel elements, each said three-color pixel element comprising first and second pixel rows, each pixel row including three unit-area polygons, wherein an emitter occupies each said unit-area polygon, wherein a red emitter occupies a left unit-area polygon in said first pixel row and a green emitter occupies a right unit-area polygon in said first pixel row; wherein a green emitter occupies a left unit-area polygon in said second pixel row and a red emitter occupies a right unit-area polygon in said second pixel row; and wherein a single blue emitter occupies both center unit-area polygons in said first and said second pixel rows;

wherein adjacent horizontal pairs of said three-color pixel elements are vertically offset from one another by one pixel row;

first and second row line drivers;

a first row line coupled to said first row line driver, wherein said first row

5 line is coupled to all said red and said green emitters in said first pixel row of each odd pair of said three-color pixel elements in each said array row position and to all said red and said green emitters in said second pixel row of each even pair of said three-color pixel elements in each said array row position, wherein said first of said row lines is coupled to said blue emitters of every odd pair of adjacent said three-color pixel elements;

a second row line coupled to said second row line driver, wherein said second row line is coupled to all said red and said green emitters in said second pixel row of each odd pair of said three-color pixel elements in each said array row position and to all said red and said green emitters in said first pixel row of each even pair of said three-color pixel elements in each said array row position, wherein said first of said row lines is coupled to said blue emitters of every even pair of adjacent said three-color pixel elements; and

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first through tenth column line drivers;

a first column line coupled to said first column line driver, said first column line coupled to all left-most emitters of every said three-color pixel element in a first of said array columns;

a second column line coupled to said second column line driver, said second column line coupled to all center emitters of every said three-color pixel element in a second of said array columns and to an eighth column line coupled to all center emitters of every said three-color pixel element in an eighth of said array columns;

a third column line coupled to said third column line driver, said third column line coupled to all right-most emitters of every said three-color pixel element in a third of said array columns;

a fourth column line coupled to said fourth column line driver, said fourth column line coupled to all left-most emitters of every said three-color pixel element in a fourth of said array columns;

a fifth column line coupled to said fifth column line driver, said fifth column line coupled to all center emitters of every said three-color pixel element in a fifth of said array columns and to an eleventh column line coupled to all center emitters of every said three-color pixel element in an eleventh of said array columns;

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a sixth column line coupled to said sixth column line driver, said sixth  
column line coupled to all right-most emitters of every said three-color pixel element in a  
sixth of said array columns;

5 a seventh column line coupled to said seventh column line driver, said  
seventh column line coupled to all left-most emitters of every said three-color pixel  
element in a seventh of said array columns;

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a ninth column line coupled to said eighth column line driver, said ninth  
column line coupled to all right-most emitters of every said three-color pixel element in a  
ninth of said array columns;

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a tenth column line coupled to said ninth column line driver, said tenth  
column line coupled to all left-most emitters of every said three-color pixel element in a  
tenth of said array columns; and

15 a twelfth column line coupled to said tenth column line driver, said twelfth  
column line coupled to all right-most emitters of every said three-color pixel element in a  
twelfth of said array columns.

76. The array of Claim 75, wherein said array is driven by dot inversion.

77. The array of Claim 75, wherein each said row line coupled to each said red emitter, said green emitter, and said blue emitter is coupled to a gate of a select transistor.

5 78. The array of Claim 75, wherein each said column line coupled to each said red emitter, said green emitter, and said blue emitter is coupled to a source/drain terminal of a select transistor.

79. The array of Claim 75, wherein said green emitter occupies a left unit-area polygon in said first pixel row and said red emitter occupies a right unit-area polygon in said first pixel row; and wherein said red emitter occupies a left unit-area polygon in said second pixel row and said green emitter occupies a right unit-area polygon in said second pixel row.

15 80. The array of Claim 75, wherein said unit-area polygon is a square.

81. The array of Claim 75, wherein said unit-area polygon is a rectangle.



82. A method of driving a three-color pixel element in a display, comprising:

providing a three-color pixel element comprising a blue emitter disposed at a center of a square disposed at an origin of an X, Y coordinate system having a first, a second, a third, and a fourth quadrant, wherein said blue emitter is square-shaped, a pair of red emitters spaced apart from said blue emitter and symmetrically disposed about said blue emitter in said second and said fourth quadrants, wherein said red emitters occupy a portion of said second and said fourth quadrants not occupied by said blue emitter, wherein said red emitters are generally square-shaped having truncated inwardly-facing corners forming edges parallel to sides of said blue emitter, and a pair of green emitters spaced apart from said blue emitter and symmetrically disposed about said blue emitter in said first and said third quadrants, wherein said green emitters occupy a portion of said first and said third quadrants not occupied by said blue emitter, wherein said green emitters are generally square-shaped having truncated inwardly-facing corners forming edges parallel to said sides of said blue emitter; and

driving said blue emitter, said red emitters, and said green emitters, wherein said blue emitter of said three-color pixel element is coupled to a blue emitter of a next nearest neighboring three-color pixel element.

83. A method of driving a three-color pixel element in a display, comprising:

providing a three-color pixel element comprising a blue emitter disposed at a center of a square disposed at an origin of an X, Y coordinate system having a first, a second, a third, and a fourth quadrant, wherein said blue emitter is square-shaped, a pair of red emitters spaced apart from said blue emitter and symmetrically disposed about said blue emitter in said second and said fourth quadrants, wherein said red emitters occupy a portion of said second and said fourth quadrants not occupied by said blue emitter, wherein said red emitters are L-shaped, and a pair of green emitters spaced apart from said blue emitter and symmetrically disposed about said blue emitter in said first and said third quadrants, wherein said green emitters occupy a portion of said first and said third quadrants not occupied by said blue emitter, wherein said green emitters are L-shaped; and

driving said blue emitter, said red emitters, and said green emitters, wherein said blue emitter of said three-color pixel element is coupled to a blue emitter of a next nearest neighboring three-color pixel element.

84. A method of driving a three-color pixel element in a display, comprising:

providing a three-color pixel element comprising first and second pixel rows, each pixel row including three unit-area polygons, wherein an emitter occupies each said unit-area polygon, wherein a red emitter occupies a left unit-area polygon in said first pixel row and a green emitter occupies a right unit-area polygon in said first pixel row, wherein a green emitter occupies a left unit-area polygon in said second pixel row and a red emitter occupies a right unit-area polygon in said second pixel row, and wherein a blue emitter occupies a center unit-area polygon in both said first and said second pixel rows; and

driving said blue emitters, said red emitters, and said green emitters, wherein said blue emitters of said three-color pixel element is coupled to a pair of blue emitters of a next nearest neighboring three-color pixel element.

85. A method of driving a three-color pixel element in a display, comprising:

providing a three-color pixel element comprising first and second pixel rows, each pixel row including three unit-area polygons, wherein an emitter occupies each said unit-area polygon, wherein a red emitter occupies a left unit-area polygon in said first pixel row and a green emitter occupies a right unit-area polygon in said first

pixel row; wherein a green emitter occupies a left unit-area polygon in said second pixel row and a red emitter occupies a right unit-area polygon in said second pixel row; and wherein a single blue emitter occupies both center unit-area polygons in said first and said second pixel rows; and

5 driving said blue emitter, said red emitters, and said green emitters, wherein said blue emitter of said three-color pixel element is coupled to a blue emitter of a next nearest neighboring three-color pixel element.

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